

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF TRANSMITTAL
OF COPIES OF TRANSLATION
OF THE INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY
(CHAPTER I OR CHAPTER II
OF THE PATENT COOPERATION TREATY)
(PCT Rules 44bis.3(c) and 72.2)

To:

YANAGINO, Takao
Noskward building
15-5, Miyahara 1-chome, Yodogawa-ku
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JAPON

| | |
|--|---|
| Date of mailing (<i>day/month/year</i>) 03 August 2006 (03.08.2006) | |
| Applicant's or agent's file reference 17105 | IMPORTANT NOTIFICATION |
| International application No. PCT/JP2004/015899 | International filing date (<i>day/month/year</i>) 27 October 2004 (27.10.2004) |
| Applicant SAIKA TECHNOLOGICAL INSTITUTE FOUNDATION et al | |

1. Transmittal of the translation to the applicant.

The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

2. Transmittal of the copy of the translation to the designated or elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

None

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

| | |
|---|---|
| The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland | Authorized officer Masashi Honda |
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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

| | | |
|--|---|---|
| Applicant's or agent's file reference 17105 | FOR FURTHER ACTION | See item 4 below |
| International application No. PCT/JP2004/015899 | International filing date (<i>day/month/year</i>) 27 October 2004 (27.10.2004) | Priority date (<i>day/month/year</i>) 29 October 2003 (29.10.2003) |
| International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237 | | |
| Applicant SAIKA TECHNOLOGICAL INSTITUTE FOUNDATION | | |

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|-------------------------------------|---|---|-----------|---------------------|--------------------------|------------|----------|--------------------------|-------------|--|--------------------------|------------|----------------------------|-------------------------------------|-----------|---|--------------------------|------------|-------------------------|--------------------------|-------------|--|-------------------------------------|--------------|---|
| 1. | This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a). | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. | <p>This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.</p> | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. | <p>This report contains indications relating to the following items:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 30%;">Box No. I</td> <td style="width: 60%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> | <input checked="" type="checkbox"/> | Box No. I | Basis of the report | <input type="checkbox"/> | Box No. II | Priority | <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability | <input type="checkbox"/> | Box No. IV | Lack of unity of invention | <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | <input type="checkbox"/> | Box No. VI | Certain documents cited | <input type="checkbox"/> | Box No. VII | Certain defects in the international application | <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application |
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. II | Priority | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention | | | | | | | | | | | | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. VI | Certain documents cited | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application | | | | | | | | | | | | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application | | | | | | | | | | | | | | | | | | | | | | | |
| 4. | The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2). | | | | | | | | | | | | | | | | | | | | | | | | |

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| <p style="text-align: center;">The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No. +41 22 338 82 70</p> | <p>Date of issuance of this report 24 July 2006 (24.07.2006)</p> <p>Authorized officer <div style="text-align: center; font-weight: bold;">Masashi Honda</div></p> <p>e-mail: pt08@wipo.int</p> |
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PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing
(day/month/year)

Applicant's or agent's file reference

17105

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/JP2004/015899

International filing date (day/month/year)

27.10.2004

Priority date (day/month/year)

29.10.2003

International Patent Classification (IPC) or both national classification and IPC

Applicant

SAIKA TECHNOLOGICAL INSTITUTE FOUNDATION

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/015899

Box No. I

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language
_____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/JP2004/015899

| Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | | |
|--|--|-------|-----|
| 1. Statement | | | |
| Novelty (N) | Claims | 1 - 4 | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | | YES |
| | Claims | 1 - 4 | NO |
| Industrial applicability (IA) | Claims | 1 - 4 | YES |
| | Claims | | NO |
| 2. Citations and explanations: | | | |
| <p>(1) Regarding Novelty and Inventive Step</p> <p style="padding-left: 20px;">Document 1: JP 2002-98636 A (Kubota Corp.), 05 April 2002, paragraphs 0022, 0028-0037, Fig. 6</p> <p style="padding-left: 20px;">Document 2: JP 55-126834 A (Tokyo Shibaura Electric Co., Ltd.), 01 October 1980, page 2, lower right column, line 14 to page 4, upper left column, line 10; Fig. 3</p> <p style="padding-left: 20px;">Document 3: JP 59-19839 A (Hiroyasu FUNAKUBO), 01 February 1984, page 2, lower left column, line 13 to lower right column, line 4</p> <p style="padding-left: 20px;">Document 4: JP 63-201538 A (Nippon Bunko Kabushiki Kaisha), 19 August 1988, page 4, lower right column, lines 10-18; page 6, upper left column, line 1 to upper right column, line 5; Figs. 1 and 3</p> <p style="padding-left: 20px;">Document 5: JP 64-72016 A (Minolta Camera Co., Ltd.), 16 March 1989, page 2, upper left column, line 13 to upper right column, line 1</p> <p>Claim 1</p> <p style="padding-left: 20px;">The invention of claim 1 possesses novelty with respect to the documents cited in the ISR, but does not involve an inventive step on account of documents 1-3.</p> <p style="padding-left: 20px;">Document 1 describes changing and adjusting charge accumulation time in true measurement based on the measurement results of preliminary measurement, and performing dark current compensation in a stage after A/D conversion. But it does not describe:</p> <p style="padding-left: 40px;">(A) Performing a preliminary measurement at a specific wavelength without saturated gain, and setting the gain for the true measurement.</p> <p style="padding-left: 40px;">(B) Performing zero-point compensation at a stage prior to A/D conversion (not after it).</p> <p style="padding-left: 20px;">Nevertheless, items (A) and (B) are disclosed in documents 2 and 3 respectively. Both are merely well-known art in the field of photospectrometry. (Furthermore, regarding (A), the CCD pixels of document 1 corresponding to the wavelength that provides the maximum energy in the measured wavelength region, described in document 2, is equivalent to "photoreceptor unit for sampling" in the present application's invention.)</p> <p style="padding-left: 20px;">Employing this sort of well-known art in the invention described in document 1 could easily be carried out by a person skilled in the art.</p> | | | |

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/015899

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box V

Claim 2

The invention of claim 2 possesses novelty with respect to the documents cited in the ISR, but does not involve an inventive step on account of documents 1-3.

Document 2 describes using merely photodiode or photodiode array as a photoreceptor unit for sampling, but the CCD used in document 1 makes a photodiode a unit pixel (paragraph 0022).

Claim 3

The invention of claim 3 possesses novelty with respect to the documents cited in the ISR, but does not involve an inventive step on account of documents 1-4.

Document 2 does not describe the details of the gain switching circuit, but document 4 discloses one that is the exponential type as a variable amplifier requiring this sort of gain control.

Claim 4

The invention of claim 4 possesses novelty with respect to the documents cited in the ISR, but does not involve an inventive step on account of documents 1-3 and 5.

Document 1 does not describe gain correction at the pixel unit, but document 5 pertains to photospectrometry using a CCD image sensor and describes changing the amplitude degree of pixel output in order to smooth pixel output.

(2) Industrial Applicability

The inventions of claims 1-4 have industrial applicability in photospectrometry.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/015899

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claim 1 refers to "diffraction lattice, etc.," thus it is unclear whether or not a "diffraction lattice" is mandatory in the description of claim 1.